07-08-2006

EPO - DG 1

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GB2005002341

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CLAIMS

1. A queue management system for controlling the movement of a group of
   one or more people through a virtual queue line for a service, comprising:

5   registration means for registering the group with the system, the
       registration means comprising an information carrier and at least one
       ID tag for the member(s) of the group, the information carrier bearing a
       registration code and the at least one ID tag including ID details for
       identifying the member(s) of the group, the registration means further

10   associating the registration code with an indication of group size and
       uniquely with the ID details;
       interface means for enabling communications to and from the group;
       a processor associated with the interface means and responsive to a
       communication from the group including a communicator address and

15   the registration code for generating a registration record for the group
       representing the group size, the ID details and the communicator
       address;
       the processor being responsive to a further communication from the
       group requesting access to the virtual queue to enter the group into the

20   virtual queue and thereafter to monitor the place of the group in the
       virtual queue line and to trigger a summons signal when the group
       approaches or reaches the head of the queue line;
       the interface means being responsive to the summons signal for
       initiating a communication to the communicator address for

25   summoning the group to the service; and
       access control apparatus at the service for reading the at least one ID
       tag and for comparing the ID details with the registration record in
       order to evaluate whether access to the service should be permitted or
       prevented.

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2. A queue management system according to claim 1, in which the registration means comprises a respective ID tag for each member of the group.

5 3. A queue management system according to claim 1 or 2, in which the at least one ID tag comprises a portable tab or band.

4. A queue management system according to any of claims 1 to 3, in which the at least one ID tag includes a member bearing a scannable code.

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5. A queue management system according to any of claims 1 to 3, in which the at least one ID tag is a virtual tag stored in memory on a computer.

6. A queue management system according to claim 5, in which the ID details

15 are in the form of biometric data.

7. A queue management system according to any preceding claim, in which the information carrier is a card and the registration code is an alphanumeric value.

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8. A queue management system according to claim 7, in which the card is a credit card and the registration code is the credit card number.

9. A queue management system according to any preceding claim, in which

25 the registration means comprise a registration pack including the information carrier and the at least one ID tag.

10. A queue management system according to any preceding claim, in which the registration means comprise at least one registration station.

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11. A queue management system according to any preceding claim, further comprising a personal communicator for the communication of audio or visual messages between the group and the interface means.

12. A queue management system according to any preceding claim, in which the processor is arranged to track the progress of the group through the virtual queue line by periodically noting the reduction in the number of people in the virtual queue line ahead of the group.

13. A queue management system according to any preceding claim, in which the processor comprises means for calculating a movement forward for the virtual queue and is arranged to track the progress of the group through the virtual queue line by periodically calculating a value representing the movement forward.

14. A queue management system according to any preceding claim, in which the processor comprises means responsive to receipt of the further communication for initiating a timing period, means for calculating a queuing time starting from the beginning of the timing period, and means for generating an indication of an expected service entry time for the group based on a calculated value representing the queuing time.

15. A queue management system according to claim 13 or 14, in which the processor comprises a memory for storing a service throughput profile, and in which the calculating means calculates the calculated value based on the stored service throughput profile.

16. A queue management system according to claim 15, in which the service throughput profile is based on records of previous use of the service.

17. A queue management system according to claim 15 or 16, further comprising monitoring apparatus for monitoring an actual service throughput, and in which the processor is arranged to receive information from the monitoring apparatus for updating the stored service throughput profile.

18. A queue management system according to any of claims 13 to 17, in which the calculating means performs calculations repeatedly as the group progresses through the virtual queue and repeatedly updates the calculated value.

19. A queue management system according to any preceding claim, in which the virtual queue line is combined with a physical queue line and in which the processor is arranged to monitor the place of the group in the overall queue line.

20. A queue management system according to any preceding claim, further comprising means for storing an itinerary for the group representing visits for a plurality of services, and in which the processor is arranged to process and manage the itinerary for the group.

21. A queue management system according to claim 20, further comprising a plurality of itinerary management stations in communication with the processor for enabling the group to create, modify and input the itinerary.

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22. A queue management system for controlling the movement of a group of
    one or more people through a virtual queue line for a service, comprising:
        at least one ID tag for the member(s) of the group, the at least one ID
        tag including ID details for identifying the member(s) of the group, the
5   ID details being associated with a unique registration code and a
        predetermined group size;
        registration apparatus responsive to an input of the registration code in
        conjunction with a communicator address for the group for registering
        the group with the system, the registration apparatus being arranged to
10   generate a registration record for the group representing the ID details,
        the group size, and the communicator address;
        a processor responsive to a request from the group for access to the
        virtual queue line for reading the registration record and entering the
        group into the virtual queue and thereafter for monitoring the place of
15   the group in the virtual queue line, the processor being arranged to
        trigger a summons signal when the group approaches or reaches the
        head of the queue line;
        interface means responsive to the summons signal for initiating a
        communication to the communicator address for summoning the group
20   to the service; and
        access control apparatus at the service for reading the at least one ID
        tag and for comparing the ID details with the registration record for
        evaluating whether access to the service should be permitted or
        prevented.
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23. A method of queue management for controlling the movement of a group of
    one or more people through a virtual queue line for a service, comprising
    the steps of:

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assigning to the group an information carrier and at least one ID tag for the member(s) of the group, the information carrier bearing a registration code and the at least one ID tag including ID details for identifying the member(s) of the group;

associating the registration code with an indication of group size and uniquely with the ID details;

in response to a communication from the group including a communicator address and the registration code, registering the group with the system by generating a registration record for the group representing the group size, the ID details and the communicator address;

in response to a further communication from the group for access to the virtual queue, assigning the group a place in the virtual queue and thereafter monitoring the place of the group in the virtual queue line and triggering a summons signal when the group approaches or reaches the head of the queue line;

in response to the summons signal, initiating a communication to the communicator address for summoning the group to the service; and

at the service, reading the at least one ID tag and comparing the ID details with the registration record in order to evaluate whether access to the service should be permitted or prevented.

24. A method of queue management according to claim 23, comprising assigning a respective ID tag for each member of the group.

25. A method of queue management according to claim 23 or 24, comprising providing the at least one ID tag with a scannable code.

26. A method of queue management according to claim 23 or 24, comprising storing the at least one ID tag as a virtual tag in a memory on a computer.

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27. A method of queue management according to claim 25, comprising scanning the ID details into the computer in the form of biometric data.

28. A method of queue management according to any of claims 23 to 27, in which the step of assigning at least one tag includes allocating to the group a registration pack including the information carrier and the at least one ID tag.

29. A method of queue management according to any of claims 23 to 27, in which the step of assigning at least one tag includes generating the at least one ID tag through a computer recognition process.

30. A method of queue management according to any of claims 23 to 29, comprising using a personal communicator for the communication of audio or visual messages between the group and the interface means.

31. A method of queue management according to any of claims 23 to 30, in which the step of monitoring comprises tracking the progress of the group through the virtual queue line by periodically noting the reduction in the number of people in the virtual queue line ahead of the group.

32. A method of queue management according to any of claims 23 to 31, in which the step of monitoring comprises tracking the progress of the group through the virtual queue line by periodically calculating a value representing movement forward for the virtual queue.

33. A method of queue management according to any of claims 23 to 32, comprising the steps of: in response to receipt of the further

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communication initiating a timing period, calculating a queuing time starting from the beginning of the timing period, and generating an indication of an expected service entry time for the group based on a calculated value representing the queuing time.

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34. A method of queue management according to claim 32 or 33, comprising storing a service throughput profile, and calculating the queuing time based on the stored service throughput profile.

10   35. A method of queue management according to claim 34, in which the service throughput profile is based on records of previous use of the service.

36. A method of queue management according to claim 34 or 35, comprising receiving information concerning an actual service throughput from the
15   service for updating the stored service throughput profile.

37. A method of queue management according to any of claims 33 to 36, further comprising performing calculations repeatedly as the group progresses through the virtual queue and repeatedly updating the calculated
20   value.

38. A method of queue management according to any of claims 23 to 37, in which the virtual queue line is combined with a physical queue line and comprising monitoring the place of the group in the overall queue line.
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39. A method of queue management according to any of claims 23 to 38, further comprising storing an itinerary for the group representing visits to a plurality of services, and processing and managing the itinerary for the group.

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40. A method of queue management for controlling the movement of a group of
one or more people through a virtual queue line for a service, comprising the
steps of:

    assigning at least one ID tag to the member(s) of the group, the at least
5   one ID tag including ID details for identifying the member(s) of the
group, the ID details being associated with a unique registration code
and a predetermined group size;

    in response to an input of the registration code in conjunction with a
communicator address for the group, registering the group with the
10   system by generating a registration record for the group representing the
ID details, the group size, and the communicator address;

    in response to a request from the group for access to the virtual queue,
assigning the group a place in the virtual queue line and reading the
registration record and thereafter monitoring the place of the group in
15   the queue line;

    triggering a summons signal when the group approaches or reaches the
head of the queue line;

    in response to the summons signal, initiating a communication to the
communicator address for summoning the group to the service; and
20   at the service, reading the at least one ID tag and comparing the ID
details with the registration record for evaluating whether access to the
service should be permitted or prevented.

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